

<b>Notice of Allowability</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/627,293	GILL, HARDAYAL SINGH	
	<b>Examiner</b>	<b>Art Unit</b>	
	A. Sefer	2826	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 2/10/2006.
2. ☒ The allowed claim(s) is/are 7-10, 17-20, 27-30 and 35-43.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f) **TECHNOLOGY CENTER 2300**
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |   |   |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)                                 |
| 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                 | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date <u>2/24/06</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment   |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance                        |
|   | 9. <input type="checkbox"/> Other _____.  |

**DETAILED ACTION**

***Response to Amendment***

1. The amendment after final file February 10, 2006 has been entered and claims 6, 16, 26 and 44-52 have been cancelled.

**EXAMINER'S AMENDMENT**

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Ervin Johnston on 2/24/2006.

The application has been amended as follows:

**In the Specification:**

Page 9, lines 14 and 15, replace "electrodes" with --electrons--

Page 11, lines 11 and 13, replace "electrodes" with --electrons--

**In the Claims:**

Claim 36, second line, replace "electrodes" with --electrons--

Claim 39, second line, replace "electrodes" with --electrons--

Claim 42, second line, replace "electrodes" with --electrons--

***Allowable Subject Matter***

3. Claims 7-10, 17-20, 27-30 and 35-43 are allowed.

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4. The following is an examiner's statement of reasons for allowance: Sato et al. ("Sato") US PG-Pub 2003/0214004, Gill ("Gill") USPN 6,400,536 and Mori et al. ("Mori") US PG-Pub 2004/0257192 are pertinent to applicant's disclosure. Sato teaches a spin valve transistor comprising: an emitter; a collector; a base between the emitter and the collector; a spin valve including a ferromagnetic free layer structure; a self-pinned antiparallel (AP) pinned layer structure without any pinning structure pinning the self-pinned AP pinned layer structure; and a nonmagnetic spacer layer between the free layer structure and the AP pinned layer structure; and the base comprising at least said free layer structure. What Sato lacks, **a self pinned AP pinned layer structure without any pinning structure pinning the self-pinned AP pinned layer structure comprising a ferromagnetic first antiparallel (AP) pinned layer; a ferromagnetic second antiparallel (AP) pinned layer; a nonmagnetic antiparallel coupling (APC) layer located between the first and second AP pinned layers; wherein said first and second AP pinned layers having the same thickness**, is taught by Gill and Mori so as to increase the sensitivity and the flux decay length and improve the magnetoresistive effect of the device. However, the combined references fail to teach the second AP pinned layer including an iron film; a cobalt iron film with positive magnetostriction; the iron film being located and interfacing the APC and the cobalt iron film. The above limitations in combination with other claim limitations are not taught or fairly suggested by the prior art nor would it be obvious to modify the references of record so as to yield a spin valve transistor, a magnetic head assembly or a magnetic disk drive of the instant application.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS

February 24, 2006